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ABSTRACT

This report presents information concerning a model of instruction that was designed to mediate student motivation. The text's purpose is five-fold: to explain what it means to mediate student motivation; to convince the reader that changes in instructional design can motivate both students and teachers; to demonstrate how to make changes to instructional design while respecting the established curriculum, teaching styles, and individual differences; to explain faulty student attribution and how it effects persistence and achievement; and to illustrate how teachers may encourage students to "work smarter and not harder." The text opens with the statement that persons need training in being students. The first lesson explains how to get and hold students' attention. The focus then shifts to modeling as a way of securing the commitment of teachers and students. It examines student behavior and students' time and effort spent on assignments. Some suggestions as to how to correct faulty attributional thinking are offered, followed by tips on how to be a professional student. The author describes good versus bad strategies, explaining that it is important to think through specific behaviors and sequences of behaviors. Some of the efforts that other institutions have made involving intervention plans are summarized. The third section presents actual examples of problems faced by the author. (Includes seven appendices and a glossary of terms.) (MKA)

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Motivational Design of Instruction to Mediate Student Motivation

by
Gilles L. Talbot
Champlain-St.Lawrence College

February 23, 1998

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PREFACE

Dear Colleague,

You will find on the following pages information about the motivational design of instruction to mediate student motivation. A **glossary of terms** is included to help familiarize you with the jargon of achievement motivation literature, when these terms are used in the text they usually appear in bold face type. The purpose of this monograph is five-fold: (1) To explain what it means to mediate student motivation; (2) to convince you that changes in instructional design can motivate both students and teachers; (3) to show how to make changes to instructional design while respecting curriculum, teaching styles, and individual differences; (4) to explain faulty student attributions and how this affects persistence and achievement; and, (5) to illustrate how teachers may engage students to "work smarter and not harder."

The Introduction makes this point: Persons need training in being students. The first lesson discussed is explicitly stated in the title of the second section, "Volitional Training and Motivational Training," in which we need to get and hold students' attention. Afterwards, we focus on how to gain the commitment of students and teachers. The answer is in modelling class-side manners and directly challenging how students behave in classes and with teachers. Since "modelling" may seem ambiguous, we present, in the next section, the key concept: to elicit students' motivation (because they do have it) rather than try "to fix" it. Teachers are all aware of the time and effort students spend circumventing assigned work. If only such students put all that energy and time into the assigned work, it seems, they would have completed it. So, in "False Effort and Other Faulty Attributions," we examine why some students behave this way. We end this section with practical suggestions as to how to correct such faulty attributional thinking.

Being a "professional" student is discussed in the "Learning Tactics and Strategies" section. It is not enough to plan how to achieve a goal. It is necessary, according to studies of "good" versus "poor" strategy users, to think through specific behaviors and sequences of behaviors in those plans. In this respect the teacher can help mediate student effort by showing the student that s/he has capacity, control, and strategy beliefs which help/hinder this process. In this section we also summarize the efforts that other institutions have made which have led them to their particular intervention plans (learning centers, peer and/or special counselor tutoring, credit/non-credit study skill workshops etc.).

In the section "Motivational Issues Addressed to Teachers About Teaching Student Motivation," we present very real examples, and not convenient textbook cases, of problems we at Saint Lawrence face. Questions like, "Will that be on the exam?" What to do with students who come unprepared to class discussions? (Although the answers to these questions and similar questions is a monograph in itself, we only wanted to show that the resources from which to glean answers already exist and have been shown to work. Why not try them ourselves?)

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In the final section, "Concluding Comments," we review the several major elements developed in the monograph. We propose several appendices to help summarize material to help both teachers and students. For the teacher, Appendix 5, "Questioning Strategies for Examining Student Motivation" is perhaps the single best place to start to get an overview and a "feel" for modelling and teaching students about motivation.

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Motivational Design of Instruction to Mediate Student Motivation

Introduction

Theories of motivation cannot be simply interpreted literally and then applied to college classrooms without running the risk of oversimplification. The challenge college teachers face is to get students to do more than just to meet requirements. When students are motivated only by grades or fear of punishment (extrinsic rewards) then students will only make minimal efforts. Personal investment in such cases is limited to passing tests and assignments. Students seem to quickly forget what they have learned. It is in this context that college teachers need motivational strategies to incite students to a higher quality of self-regulated learning. **Self-regulated learning** is:

> ...defined here as the ongoing process in which the learner makes sense of the learning task, creates goals and strategies, and implements actions designed to meet his or her goals for the given learning context (Ridley, McCombs and Taylor, 1994; p.53)

There is an inter-relationship amongst the needs of the institution, teachers, and students. College institutions seek more graduates; teachers seek more self-regulated learning from students; and students seek easier ways to learn and get better grades. What is needed is mediated motivation. Mediated motivation begins with **mediated thinking**..

> While it seems incorrect to discourage a teacher from trying to change a student in the areas in which he has obvious need for improvement, the teacher must keep in mind that such attempts should be only a small portion of his relating to the student; for his job is not primarily to change students, but to *assist them* in their efforts at changing and improving themselves. The role of assisting the students comprises many different functions; encouraging, sympathizing, challenging, presenting new things, being an example, advising, depending on the changing needs of the particular students (Dultz,1994; p.35).

Self-regulated learning is the one critical dimension of intrinsic and *academic* motivation. Theories of intrinsic motivation predict behaviours in a free-choice situation when actually students have just about everything prescribed for them. Teachers are very conscious of helping students to develop learning strategies and study skills. The problem, Weinstein and Rogers (1985) accurately point out, is that college teachers seem to be doing most of the **comprehension monitoring for** the student. Such approaches as reminding students about due dates, what is expected and how to avoid certain careless mistakes are often mentioned to students by teachers. The problem is that the teacher is doing the work that the student ought to be doing for himself or herself.

Implicit to the issues of self-regulated learning, mediated thinking and motivation, and comprehension monitoring is the issue of the motivational design of instruction. The **motivational design of instruction** rests on five important sub-tasks of the larger motivational context: (1)Volitional training must precede motivational training, (2) teachers must elicit the cooperation of students, (3) teachers need to model the behaviours, (4) faulty student attributions for success and failure must be corrected, and (5) students must be helped to acquire and practice learning tactics as part of their learning strategies.

The purpose of this monograph is to argue that the sub-tasks outlined above can be integrated into a coherent, concerted and cooperative approach to working with Saint Lawrence students. We discuss this viewpoint in the following pages. We summarize the methods and techniques with which to do this in several appendices.

Volitional and Motivational Training

Implicit to motivational training is the idea of linking will to skill. Motivation is concerned with maintaining a course of action while volition calls upon executive strategies to make the decision. This is the reason that we cannot only be concerned with the development and use of motivational strategies. We need to understand how students think through their decisions. We will address this specific issue in a later section. For now, let us concentrate on how to mediate student volition.

Keller (1987) has long been concerned with helping college faculty develop strategies for stimulating students to learn. He has developed the **ARCS Motivation Model** which focuses on four basic concepts: (1) get students' **A**ttention, (2) show **R**elevance, (3) build students' **C**onfidence, and (4) generate **S**atisfaction. Stimulating student interest for the course, topics etc. is the most important first step because research shows that students' emotional responses are primary motivators. The motivational design of instruction in Keller's model is presented in these five points:

1) Do something new, unexpected and even conflictual or paradoxical.
2) Personalize lectures with personal anecdotes, stories and other emotional elements to break the monotony of the intellectual activity.
3) Help students to understand the world around them by relating topics to everyday events.
4) When very different or new topics need to be introduced try to go slowly and to anchor the new material to something students can relate to.
5) Encourage students to ask questions, to think out loud, and to otherwise interact in the classroom.

Those who are interested to see these principles put into practice in a college classroom can read Coppola's account on how he improved chemistry instruction for the mutual satisfaction of students and himself (Coppola, cited in Pintrich,1995).

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Gaining the Commitment of Students (and Teachers!)

Neither students nor teachers want preconceived plans, solutions and especially attitudes imposed on them. Besides, impositions favour psychological reactance (i.e. doing the opposite when one feels that one's basic rights to decide are being violated) and is antithetical to *self*-regulated learning. The day has passed when students would comply simply because teachers told them what to do. College learning has changed qualitatively (computers, videos, internet etc.) and quantitatively (more courses with more material in each course). The motivational "approach" of the stick-behind-and-the-carrot-in-front does not work because it reflects manipulation and not motivation.

Wilson (1990) has proposed "class-side manners" to describe how one gains another person's commitment. **Class side manners** is summarized in a four step process:

1) Share self-control;
2) Focus on generating new knowledge;
3) Be prepared to do what you ask of others; and
4) Be an active listener.

Teachers who consider class side manners see the difference between, "Did you understand?" and "Did I explain it clearly enough?" This is a reformulation of the old "The glass of water is half full or half empty," applied to the classroom. With the latter statement the teacher is assuming most of the responsibility for the effectiveness of the communication. Consequently the student should feel little threat to their self-esteem and not have to think that s/he is stupid for not understanding the teacher, as is implied with the statement, "Did you understand?" For example, if you will, recall attending a workshop at a professional conferences. The workshop facilitator is always careful to make the audience feel at ease. The facilitator doesn't want to make the audience "defensive" (feeling inadequate and thinking their stupid). So, whenever the audience seems to be having trouble understanding, the facilitator will often just try another route, or if questions are put to him suggesting that a member of the audience is confused, the facilitator will state, in one way or another, "I'm sorry. I didn't explain that correctly. Let me try again with this reformulation." This is one of the subtle forms of communication which professionals have learned and which makes it seem so easy for us to "understand" things when we are such conferences. All our energies are on the topic. None are wasted on defensiveness.

Teachers, like the professionals who deliver workshops at our conferences, provide students with a model and with support to understand the changes in attitudes and behaviours that are necessary for fostering self-regulated learning. The facilitator may say she or he assumes the entire responsibility, but we know that isn't entirely true. We have all marveled at the patience and tact of the facilitator in dealing with an irate (certainly irritating) person in the audience. The point is that the facilitator doesn't let the problems interfere. The message is important. Everything focuses on the message and nothing nor no one will deter attention from it. This method of focusing on the message and assuming responsbility for communication gives the teacher, or facilitator. the necessary degree of control over

the classroom, or workshop, which creates the stimulating intellectual atmosphere that students/participants find so rewarding.

A personal anecdote in closing. The very best retort to maintain control and deliver the message I have ever seen was at a conference given by one of Ralph Nader's associates. Someone in the audience had been "planted" to raise a delicate issue so as to "stomp" out some of the enthusiasm at the meeting. The speaker was there for one purpose - the message. The speaker recognized the "plant" for what it was, an attempt to subvert the message and thus threaten the conference. I can recall that speaker's response, which drew a round of applause, "May God love you! And, I'm trying! Next!"

The teacher's willingness to impart learning-to-learn skills, much like the professional facilitator at workshops, impacts on the will of the audience to engage in self-questioning, goal-setting, time management, decision-making and problem-solving, and learning to collaborate.

Modelling Appropriate Academic Behaviours

Increasing self-awareness, monitoring one's progress (rather than focusing only on achievement and results), and learning to be flexible and adaptable are at a premium in college success. Good and Brophy (1995) provide excellent arguments, supported with research results, to show that teaching students these basic principles opens the way for teachers to help students acquire basic principles of learning. And, once that happens, the student quickly learns that developing and using strategies is under his or her control. Academic success is then possible.

Whenever the concept of motivation is introduced there is a natural human tendency to think a little defensively, "And, what is *wrong* with the way I do things?" Teachers can feel it when they have to correct students.

Students want people who care about them and help them to prepare for the future and its demands. Carpentier (1995), in a Québec Government document, has shown that the principles we have thus far elaborated coincide with the perceptions students have for college "success."

Students apparently want their Cégep experience to help them to

1) learn the means to an end
2) learn how to get work done
3) understand who they are and where they are going
4) relate with others
5) develop a professional and personally satisfying lifestyle.

Many researchers have noticed that something is inherently wrong with trying to "fix" student academic achievement behaviours. Teachers' recent efforts in the "encadrement" project demonstrated

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this clearly. McCombs (1991) has stated it this way,

> Motivating learning is largely dependent on helping to bring out and develop students' natural motivations and tendencies to learn rather than "fixing them" or giving them something they lack (p.119).

The most effective way to show students about a "generative model of processes and skills underlying continuing motivation to learn (McCombs,1988; p.155)" is to model it yourself. And, as McCombs suggests, there is a real need for "motivational skills training programs(p.159)." We have adapted the following list from her work (McCombs,1988, p.164):

> A second major outcome of an integration of research on intrinsic motivation and its role in strategic behaviour, is that it is possible to describe the functional *purpose of a motivational skills training component* within an integrated learning strategies curriculum. This functional purpose can be stated as...
>
> 1) promote students' perceptions of self-efficacy and personal causation
> 2) Train students in metacognitive skills
> a) self-assessment/evaluation,
> b) setting realistic self-standards,
> c) planning,
> d) self-monitoring,
> e) self-correction, and
> f) self-rewards.
> 3) Cognitive components training include
> a) problem solving,
> b) decision making, and higher order analytical skills
> 4) Affective skills contributing to motivation
> a) goal setting,
> b) deriving positive expectancies for success and personal control,
> c) managing stress and anxiety, and
> d) learning to effectively communicate feelings and needs.

False Effort and Other Faulty Attributions

The following anecdotal story is poignantly real and very germane to the discussion at hand. Ms. Valian, today a university professor of psychology, describes how she lived through, and converted herself from, being grade-oriented to being learning-oriented. Her insights support our discussion to the effect that helping students with self-awareness and making choices is the central issue. She also provides a very detailed step-by-step analysis of <u>self-determined</u> scaffolding to achieve her goal.

> The problem consists in being unable to work, not because of external pressures such as lack of time, but because of internal problems, which can be exacerbated or disguised by external pressures. (Valian,1977; p.164) ... ...

> I continued the analogy (that work was natural) and decided I needed a similar form of therapy. I needed to break the process down, starting at the least threatening level, slowly building up and assembling the whole, and discussing how I felt and what I was learning as I was doing it. ... The common feature was starting with a small, imaginable, doable piece of behavior and working up; the crucial difference was the absence in my program of any idea of punishment or reward (Ibid; p.165) ... ...

The key concepts Valian invokes are that the student must set a realistic goal. In Valian's case the idea of doing a "day's work" was to agree to try a period of fifteen minutes of work. She reports having been able to do only 5 minutes of it during her first attempts! Gradually, she worked her way into a 15 minute work schedule. As she reports, her college work consisted in doing "enough to get by"!

We can all imagine how teachers would react to students who would dare say that they want to "get by" cégep on only fifteen minutes of work a day! We are so conscious of the performance level required to achieve that we formulate for the students what we know must be the "doable piece of behaviour" to attain the goal. In that process teachers are engaging in comprehension monitoring for the student. The student's executive and managerial strategies have not been called into play.

We forget, probably because of our own attributional processes and vested self-interests, that the building blocks must be set by the student. Otherwise students will not even want to try to work on them. Students need help in studying tactics and training in methods of selecting, combining and generalizing tactics. Once students understand the tactics the next step is to understand the principles for choosing one and not another and to monitor how well each fares to move one towards the goal.

Some students are faced with admitting that they must lack ability if they have to work harder. Herein is the crux of the problem of working with such students. They think that to work harder, as teachers seem to insist, and then to fail, is a damning confirmation to themselves and their peers that they are indeed "stupid." Such thinking makes students at risk of failing. These at-risk students see themselves threatened and feel the need to protect themselves ---with the consequences we have come to call **false effort**. Covington and Omelich (1979) explain false effort this way:

> ...while teachers often reward achievement through effort and punish not trying, for many students expending effort when risking failure poses a threat. In effect, effort can become a double-edged sword for many students. The net result is that they must thread their way between the threatening extremes of high effort and no effort at all. On the one hand, they must exert some effort to avoid teacher punishment, but not so much as to risk public shame should they try hard and fail. We believe that excuses are the students' main ally in maintaining this precarious balance. A popular tactic is

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> to try hard, but to provide oneself with excuses to explain why trying did not help, thereby avoiding inferences to low ability by redirecting the causes of failure to external factors. It is also common for students to invent plausible reasons for having not tried, thus forestalling teacher displeasure (p.170).

The point is that students do think about effort and academic behaviours. They may spend inordinate amounts of time devising elaborate and defensive cognitive or affective strategies. The cognitive strategies take the form of excuses, procrastination, complaining and arguing after the fact ---mostly to bicker about *grades* etc.) Affective strategies tend to protect the self from entertaining threatening ideas that revolve around the themes of perceived incompetence, lack of talent etc. It is at this point that many persons working with students realize that had students shown as much *will* to put in effort to learn they probably would have increased their performances, which it seems is what students said they wanted in the first place. Students' need to think is attached to other facets of their behaviours. We have just seen that students' thinking about how they feel and think for learning (learning orientation) translates intentions into learning actions.

There is every basis to believe that the law of effect operates for students' study skills and learning strategies as they make the transition from high school to cégep. **The law of effect** simply means that one tends to repeat those behaviours which have been followed by a reinforcement. In plain English, people tend to repeat what they think "works" for them. So, whatever was done to get through high school seems a good starting point to start off in college. But because of the threat to self-esteem, and supported by the overconfidence and false consensus effects, students tend to ignore feedback that things (study skills and learning strategies) are not indeed "working" (doing at least passing work in Cégep courses)!

Apparently students think they know more about the procedures, conditions and contexts of study skills and learning strategies than they actually do (Stockley et al..,1997; Winne et al., 1997), a phenomenon called **errant knowledge**. Errant knowledge is one category of student characteristics to help us understand why students have not responded well to teacher efforts to assist them. Students tend to wait for evidence that confirms that the study skills and learning strategies used to get through high school are inadequate or inefficient for accomplishing cégep work. The consequences of errant knowledge on academic performances are often compounded by the overconfidence effect; false consensus; and attributional errors for ability, and effort and task difficulty perceptions.

The **overconfidence effect** means that students do not plan alternative actions to compensate or re-adjust sub-goals when they get feedback that suggests to them that they need help. Students remain confident about their study skills and learning strategies in spite of disconfirming information. It is in human nature to actively extract information from our environments. As we do so the tendency is to make the information fit into pre-existing categories. When the information doesn't fit we like to think that we change the way we think. In fact, we tend to hang on to our perceptions and to dismiss, downplay or otherwise ignore the incoming information which doesn't fit into our current patterns

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of thinking[1]. So, a "good" student out of high school runs into "bad" teachers, lousy assignments, bad breaks and so on. In the absence of one major traumatic event, it takes a lot of negative feedback before we challenge the old order of things and change our minds.

Students also rely heavily on peers for feedback. When they fail a quiz, or do not complete an assignment, it is "okay" according to the principle of **false consensus** (many others share our faults). As students get into serious academic difficulty they do not think about overconfidence and false consensus effects. Rather, many students ignore their own poor study skills and learning strategies as they seek to understand the causes of their academic difficulties.

An **attributional error** arises when the sense one makes of behaviour is assigned to the wrong causes. The attributional error is often called the "fundamental" attribution error because most everyone, at one time or another, tends to engage in it. People are especially prone to commit the fundamental attribution error under conditions of success or failure, and depending on whether we are talking about our own or others' performances. The field of social psychology, which collates the literature on the topic of the fundamental attribution error, documents that under most circumstances when the person involved is talking about his/her success, the causes will be assigned to one's ability and effort (personal causation) and failure for himself/herself will be attributed to task difficulty, unrealistic temporal constraints or generally to "bad luck" (dispositional causes).

A major problem with students who tend to get into academic difficulties is that they think in terms of attributional simplicity. Talbot (1990) has shown in a longitudinal study of St.Lawrence students that "previous high school achievement and preferences for complex explanations of behaviour are the best correlates with persistence and achievement (p.53)." Math and English teachers, amongst many others, will easily furnish examples of how difficult it is to work with a student who begins with, "I'm just no good in math/essays." Students who make such statements operate on the basis of attributional simplicity. As they do so, they reveal the ultimate simplistic attribution, "You are or you aren't intelligent!" Convincing students that intelligence can be learned is no easy task. It is at this point that many teachers realize in working with such students that will-power is undermined by such thinking. And, it is also the common response of teachers to begin motivational training rather than starting with volitional training. Those who work with students recognize that effort attributions can be shown to exist. There are many examples of the student work ethic and academic success. The problem is that the student was not involved or committed to any personal effort.

For the grade oriented student the example is "real" when it is authentic (personal and meaningful), made freely (choice and change), and based on opportunities to practice without fear of the consequences for "failing" (personal validation, adaptation and generalization). Teaching students to rethink their explanations of the causes for their failures, **attributional retraining**, is possible when we ask them to think out loud and correct their faulty attributions. For example, "I'm just no good in math/English"(for example) has to be corrected, usually, with "It is not that you do not have ability.

---

[1] See the work of Jerome Bruner and his Hypothesis-Testing Theory of Thinking. See specifically the experiment by Bruner and Potter (1964) to which we refer here.

We don't know how much ability you have. What we do observe is that you get so 'worked up' over the thought of the work that you just give up in frustration."

Pressley (1995) cites much research to support the conclusion that, "Poor learners' responses tend to involve much trial-and-error responding, are often imprecise, and are impulsive (p.347)." So, some students will need help not only to think but to re-think about how they think, feel and behave with respect to thinking. *The cornerstone of attributional retraining is to elicit from students statements which focus on progress and not on performance.* Research on cognitive academic achievement shows attributional retraining is desirable, possible and effective for improving academic outcomes (Menec and Perry,1995; Perry et al.,1993). Our problem has been to focus on motivation for acquiring skills which is a performance outcome. As Snow and Swanson (1992) have stated:

> Results indicate that motivational intervention can impede learning by diverting attention to self-regulatory activities in early stages of skill acquisition, depending on ability; in later stages the same interventions can facilitate performance (p.600).

In summary then, to correct faulty attributional thinking teachers can

1) Encourage students to describe behaviours that lead to desired goals;
2) Get students to verbalize key *choice points* and the consequences these choices have on the desired behaviour;
3) Encourage students to think about the *changes and progress* rather than the results and outcomes;
4) Correct students' faulty affective attributions ("put downs," and other self-handicapping and self-defeating statements);
5) Get the student to agree to some short-term and reasonable *behaviours based on his or her choices*;
6) Follow up with the student on how she or he monitored the changes--- paying attention to both the successes and failures of the desired changes. Ideally, you should review what went wrong early in the meeting with the student and then towards the end of the session review the things that went well.
7) Provide strong social reinforcers (smiling, nodding, eye contact and a pleasant smile etc.) to students (in class, out of class, in the office etc.) whenever they make appropriate efforts.

Learning Tactics and Strategies

An important step in the process of mediating student motivation, as we have seen, is for teachers to model the role of self control (Garcia et al.,1997). Students need to see how teachers think through their work to learn and otherwise do their work. Part of this modelling to think through has been described by Derry (1988/1989) as the "**4 C's**": **C**larify the learning situation; 2) **C**onstruct a learning strategy; 3) **C**arry out the strategy, and 4) **C**heck results (p.9). In effect,

Derry's "4 C's" helps students think through strategic learning by discovering, using, and seeing modeled strategic *tactics*.

In essence, the **strategic learning** changes that take place in the student appear related to perceptions about processing strategies: strategy, capacity and control beliefs. A **strategy belief** is composed of a learning strategy and a learning tactic which are assumed to be under cognitive control. Derry (1988/1989) offers us these useful descriptions,

> Learning is a form of problem solving that involves analyzing a learning task and deciding a strategy appropriate for that particular situation (p.4).
>
> A learning strategy is a complete plan one formulates for accomplishing a learning goal; and a learning tactic is any individual processing technique one uses in service of the plan. (p.6).

The opportunity for the student to learn and practice the principles of strategies leads to self-explanations which, as we have shown, are related to motivation and effort regulation. Derry (1988/1989) states the case well when she writes, "Verbal information is likely to be called into service only if it is understood when learned and only if it is stored in memory within well-structured, well-elaborated networks of meaningfully related ideas (p.9)." In other words, it is important for the student to understand the process, the means taken to achieve the end, and especially to realize that s/he can do this (**capacity beliefs**) in one of many personalized ways (**control beliefs**) that will lead to the desired outcomes (effort, persistence and academic performance).

There is also much other evidence to show that variants of mediated motivational learning are successful with at risk students (Deshler and Schumaker, 1988), the handicapped (Feuerstein,1979); and Québec high school students (Audy et al.,1993). The number of "first year experiences" to train students in strategic learning reported in Vale's (1996) article, the popularity and use of "learning centres" in Canadian universities, colleges and cégeps testifies for the need of institutions, teachers and students to work together for the motivational design of instruction. Teaching students about the tactics for learning, and the methods for using them, forces students to think constructively ("to improve") rather than defensively (" to prove") about themselves.

In a cursory examination of what is going on in the Québec Cégep system, one finds seven thematic approaches to the study of the first year experience. Some colleges have developed Learning Centers (Champlain-St.Lambert; Edouard Montpetit; and de Maisonneuve); some structured thematic workshops (most often in mathematics or core language) (Jonquière, Rivière-du-Loup; Saint Lawrence); Orientation programs (Rimouski, André-Laurendeau; Saint-Jean-sur-Richelieu; Saint Laurent; Limoilou); Scheduling and planning workloads during the semester (Sainte-Foy; de Maisonneuve); Formative feedback at mid-term (Valleyfield, École nationale d'aéronautique; and Champlain-Saint Lawrence); Mastery Learning (André-Laurendeau; Shawinigan; La Pocatière); and,

Integrated activities (Shawinigan; Saint Jérome; Sherbrooke)[2]. All of these programs have in one way or another strived

1) to develop a learning culture and to introduce students to the institutional climate.
2) to increase student retention, promotion and graduation.
3) for the cognitive engagement of students in the hopes of stirring students' self-regulated learning;

After examining the approaches that have been studied and field tested in the United States, Canada, and especially in the Québec Cégep system, we are lead to the following conclusions:

1) Most institutions, including Cégeps, have developed a personalized approach adapted to the needs of their student population. The institution has a clear definition of the culture of the place which is public knowledge.
2) Most institutions have tried varied formats of intervention programs: Orientation weeks; non-credit and credit courses over part or all of the session; courses given by outside specialists, teachers, peer counsellors or mentors (successful students in the second year); workshops; drop-in or learning centers, etc.
3) All programs have built in a means to evaluate program effectiveness.
4) Most of the programs have resulted from introspective studies.
5) Coincidently most of the programs, and a good deal of academic motivation research, all point to reading skills.

At Saint Lawrence we have real temporal and physical constraints. Teachers had been involved with helping and guiding students many years before we ever heard about "encadrement." The problem at Saint Lawrence is time and space. We do not have the physical space to have several concurrent learning centers. Also, both students and teachers are already weighed down with workloads. The only realistic solution appears to be to work to integrate into the classroom the principles presented in this monograph. The trick is to find a way to assist teachers without meddling in their academic affairs. We need to respect the curriculum, the teacher's methods and style of teaching, the student's needs without adding more work to their workload, and yet still deliver a "motivational skills training program" as McCombs put it. [NOTE: The possibility of doing this has been worked out. A formal research proposal for the Fall,1998 session has been submitted to the college administration where it is under study. In Appendix 7 one will find the general principles of classroom management which are affected.]

We are convinced that by helping students acquire strategy, control and capacity beliefs we are meeting their perceptions for a "successful" education. There is some experimental evidence for this assumption. Bélanger (1996a) reports on a series of experiments, conducted at Cégep de Sherbrooke, to help students develop better cognitive engagement skills. She states,

---

[2]This list is meant to be indicative and not exhaustive.

> L'engagement dans les études y est défini comme un processus complexe par lequel les étudiantes et étudiants s'investissent dans la planification de leurs études, la participation aux diverses activités d'apprentissage qui leur sont proposées et l'autoévaluation de leur expérience collégiale (p.5).

Bélanger, in a personal communication to the author, reports that significant improvements in students' scores were observed compared with those from a similar group the previous year. Did these "scores" affect persistence and academic achievement? The answer,

> Liens entre engagement dans les études et réussite: ... On observe donc assez peu de différences dans les scores de l'engagement, même en ne comparant que les étudiants les plus forts et les plus faibles. Toutefois, les différences de moyennes sont significatives pour tous les facteurs de la composante Planification. Il est clair alors que des efforts devront être consentis pour améliorer les habiletés de planification chez les étudiants pour pouvoir espérer améliorer l'engagement et la réussite (Bélanger, 1996b; p.6).

So, will and skill can be linked by teaching students the instrumentality of effort (motivational training) and of making timely choices (volitional training). Self-regulated learning, as we have argued, is preceded by cognitive engagement (volitional training) which, according to Bélanger, rests squarely with helping students with strategy, control and capacity beliefs!

Motivational Issues Addressed to Teachers About Teaching Student Motivation

Although there are excellent materials (Cross and Angelo, 1988; McCombs and Pope, 1994; and Johnson et al., 1991) to help teachers understand motivational processes, it remains that the focus of the "self" so far has been on students. If we are to get teachers involved in reflective self-awareness for student motivation then it would seem worthwhile to address issues related to the teacher's motivation.

> A faculty development program that encourages faculty from different disciplines to engage in research on student cognition, motivation and self-regulated learning in their own classrooms teaches theory as well as practice. The program has been well received by faculty and has also produced useful results for academic departments and the university as a whole (Karabenick and Collins-Eaglin,1995; ERIC Abstract)".

Addressing motivational issues in the classroom is more important than <u>how</u> they are treated! Ignoring issues is the worst thing to do. The best is that the issue is handled "properly," and even poorly but don't neglect addressing motivational issues. Let's be clear about one mistaken belief: Quality instruction <u>does not necessarily</u> imply, or account for, motivation in the classroom. This difference between motivational and instructional psychology is important because it points to the fact that while the two may share many influences and outcomes, each is <u>designed differently by the</u>

teacher! Motivation is a human enterprise. It requires the teachers' "touch.".

The following anecdote by another teacher, describes my personal experience, and probably that of many other teachers as well.

> When I was first exposed to all of these strategies I was more than a little overwhelmed! As I further explored these strategies, however, I saw how they were synonymous with effective teaching. Further, I saw how I could incorporate these strategies into the curriculum. I felt that I had to prioritize and teach students only a few strategies at a time. I realized that if I tackled too many strategies at one time I would overwhelm myself and many students and therefore not accomplish anything! This step-wise approach was part of an even bigger realization: As a teacher I had to be self-regulated if my students were going to be! ... (p.52)"
>
> I know this is a long-term process and I will have to moderate my level of control dependent upon my comfort level, the students' willingness to take a risk, and the maintenance of a sane learning environment..... I must give myself permission to fail, just as I will allow for my students. (Ridley,McCombs and Taylor,1994; p.53)

McCombs and Pope (1994) provide realistic classroom examples in which teachers will find that motivating students is a positive experience which in turns motivates teachers. The title is in itself revealing, Motivating Hard to Reach Students. The challenge or responding to student motivation arouses the teacher's insecurity. The teacher is not too sure of the methods. Well, if it's any reassurance, the student feels the same way every time s/he signs up for a course and for the first few classes. By the way, if the reader is looking for an articulate, brief, up-to-date review of strategies (with classroom examples and case studies) be sure to consult McCombs and Pope (1994). The following materials, abridged from their table of contents, is revealing:

> Goal One: Understanding the Nature of Motivation
> Research on What Works With Hard to Motivate Students
> Goal Two: Understanding Motivation and How It Can Be Enhanced
> What It Means to Motivate Students
> Goal Four: Creating a Classroom Environment That Motivates Students.

There is also a very pertinent chapter ("Overcoming Obstacles to Change";Covington and Manheim-Teel, 1996) in the same series. It is of capital importance to realize at this point that great care has been given to finding suggestions for teachers and students while respecting the individual differences of both. We don't want a motivational approach designed for "hard to reach" students at the cost of neglecting the "ordinary" student, nor do we want teachers to live in a world of insecurity because teaching methods and styles have to be changed.

Our approach rests on integrating information, on incorporating changes to teacher routines as the teacher sees fit and as the teacher thinks students will need. The analogy that comes to mind is like

grocery shopping. Everyone finds what they want and yet it is quite likely all very different for each shopper. The only problem is that the "grocery store" must contain a variety and quantity of fresh materials in order to meet such varied demands. So, in this respect, I have gone grocery shopping but this time to locate these types of "motivational grocery stores." I have intentionally focused on real motivational type questions which teachers at Saint Lawrence can appreciate. In the following paragraphs I try to summarize the results from some of these major motivational books.

McKeachie et al.'s (1994) Teaching Tips - Strategies, Research, and Theory for College and University Teachers (ninth edition): This paperback book may be read a few pages at a time since it is organized around motivational themes. The following titles are indicative and not exhaustive:

-What Can I Do About Nonparticipants?
-The Discussion Monopolizer
-How Can You Have a Discussion if the Students Haven't Read the Assignment?
-What Can Be Done to Get Attention?
-Alternatives to Traditional Tests
-Instructions to Students
-Helping Students Become Test-Wise
-Helping Students Learn From the Test
-Grading "on the curve": Don't Do It!
Problem Situations and Problem Students (There's Almost Always at Least One!) (Chpt. 24)
-Attention Seekers and Students Who Dominate Discussions
-The Silent Students
-Inattentive Students
-The Unprepared Students
-The Flatterer, Disciple, Con Man (or Woman)
-The Discouraged, Ready-to-Give-Up Students
-Students With Excuses
Motivating Students for Your Course and for Lifelong Learning (Chpt. 31)
Teaching Students How to Learn (Chpt.32)
BE CERTAIN TO READ: ""Help! I Don't Have Time to Teach Strategic Learning" (p.367)

Perhaps the single best explanation that motivational design of instruction impacts on students is by Candy (1991). Students approach courses, which may not always be to their liking. When that happens students turn their attention to teachers and teaching methods. Czikszentmihalyi (1982) refers to the interaction amongst contents, teacher and teaching method as "flow." "In flow, one is carried away by interaction to the extent that one feels immersed in the activity ---the distinction between 'I' and 'it' becomes irrelevant (p.22)." Czikszentmihalyi (1982) very well captures the general idea of the importance that teachers play in "flow."

> In close quarters it is more difficult to dupe a young person into believing that something matters when it does not. Professors who are cynical about their jobs,

who do not enjoy what they are doing, do not help the transmission of knowledge; they only spread cynicism down another generation. At the same time, a teacher who loves the subject, who enjoys the process of thinking, is the most convincing argument for the usefulness of knowledge. This does not mean, of course, that if Ms. X enjoys mathematics, all of her students will adopt her for a model and become intrinsically motivated to pursue mathematics. Too many other variables help to determine the process: the students' talents, competing interests, the degree to which they are already convinced that math is boring or meaningless. But even those students who will never be turned on to math will know that it is indeed possible to love it, because Ms. X bore witness to that unlikely possibility. And that knowledge might in the long run be more useful than facility in calculus.

When students are asked about teachers who were influential in their lives, and the reasons for such influence, their answers do not fit into the theories that social scientists have developed to account for the effectiveness of role modelling. According to current theories, a young person wants to imitate an adult who has status and power, someone who has control over desired resources, who can reward and punish. Socialization is supposed to be based primarily on fear, envy, and greed. Somehow this neat explanation manages to ignore the rather obvious fact that young people (and not only they, as the increasing incidence of mid-life crises shows) will imitate adults who find life worth living, even in the absence of status, power, and control over resources (p.19).

It is not the transmission of information, but the transmission of meaning that is involved... Meaning, which refers to information that is integrated in terms of a person's life goals, cannot be taught; it can only be demonstrated in one's own actions. (pp.20-21).

Czikszentmihalyi (1982) offers us some ideas as to how to maintain "flow."

In summary, any activity can become rewarding if it provides the following requirements:

1. The activity should be structured so that the actor can increase or decrease the level of challenges being faced in order to match exactly his or her skills with the requirements for action.
2. It should be easy to isolate the activity at least at the perceptual level from other stimuli ---external or internal--- that might interfere with involvement in it.
3. There should be clear criteria for performance; one should be able to evaluate how well or poorly one is doing at any time.
4. The activity should provide concrete feedback to the actor so that one can tell how well one is meeting the criteria of performance.

> 5.The activity ought to have a broad range of challenges ---possibly several qualitatively different ranges of challenge--- so that the actor may obtain increasingly complex information about different aspects of the self (p.23; Czikszentmihalyi,1982 citing himself 1978b)."

We all have some ideas about what a strategy is, how to explain it to a student, to provide examples of it in class etc. What is beneficial about the Cross and Angelo, and Johnson et al. books is that the teacher can readily find more information about specific strategies. The following books are full of practical, ready-to-use, suggestions. The reader who is interested in quick and easy strategy suggestions is encouraged to read Cross and Angelo's Classroom Assessment Techniques - A Handbook for Faculty (1988). The approach is so strong and popular that a network has formed around their work ("Classroom Assessment Training Project"; see Catlin and Kalina,1993). There is also the Teaching Tips for Users of the Motivated Strategies for Learning Questionnaire (Johnson et al.,1991). "The 'Tips' are intended as cues for teaching thinking, to be tried, modified, or used as the individual teacher desires (p.4)."

Is There Any Proof That These Suggestions Will Work?

How modelling, teaching and helping students to learn and practice strategies (in mathematics) in a cégep (Baie-Comeau) has been clearly written by Lise Saint-Pierre (1991). [NOTE: We have reproduced in Appendices 1 and 2 her excellent summary of the cognitive strategies and the worksheet she prepared to help students with college math. Since the metacognitive strategies were only beginning to emerge at the time, as she states herself, we have outlined them in Appendix 3.]

We have developed a more general model of the cognitive strategies for reading, applicable across disciplines. [You will find it in Appendix 4, "The Four Steps for Working Smarter and Not Harder."] The intention is to show how this information can be shaped to accommodate difference disciplines and pedagogical vehicles. Many of the examples in this monograph were drawn intentionally from English or mathematics. Students often have a negative attitude, or former unpleasant experiences with the discipline, that inhibits them from making real personal investments.

Readers who are interested in the interactions amongst institutional and task requirements; cultural, social and personal demands; student and teacher perceptions; and, how teachers can model (i.e. teach students to learn and practice strategies) are referred to the excellent work by Barbeau (1991,1993; Cégep de Bois-de-Boulogne). Appendix 5 presents specific information on "Questioning Strategies for Examining Student Motivation" which may prove helpful to assist teachers who want to learn how to talk with students about the student's motivation.

We have explored students' intrinsic/extrinsic motivation strategies in some detail in this monograph. Appendix 6 presents a detailed case study so that the teacher can focus on the issue without being encumbered by theoretical terminology and explanations.

The real question in this section in many readers' mind is, of course, "Is There Any Proof That These Suggestions Will Work **For Me And My Students**?" The answer to that question will have to come from you. I trust this monograph will assist you to continue to change right along with the students, for whom you so dearly hold that they should change from studying with you.

Concluding Comments

We assume that teachers have little training in motivation, are not familiar with the terminology and theories of motivation and therefore would find it difficult to abstract the general principles to be applied to their specific discipline and classrooms. We also assume that no one theory of motivation can apply to all students, or even to many students all the time. We also assume that our cultural and institutional climate wants students not only to improve but also to prove themselves. It is nice to want to work on progress but our society still uses grades, diplomas and other extrinsic symbols of achievement. This last assumption implies that motivational designs will have to emphasize personal, instrumental and cultural values for learning. With this in mind, we propose that an analysis of motivational design of instruction follow these parameters:

1.0 Essential preconditions
- 1.1 A supportive environment
- 1.2 Adjust the level of task difficulty for tests, assignments etc.
- 1.3 Set meaningful learning objectives
- 1.4 Provide coherent, consistent and persistent messages in the classroom, and encoragement to individuals, to develop achievement motivation.

2.0 Motivate by modelling, correcting faulty attributions, teaching tactics and strategies for change, minding "class side manners," and encouraging cognitive engagement.

We have derived from the literature on achievement motivation theory many principles with a view of applying them to the college teaching and learning environment. College teachers know that earning a passing grade in their courses is within reach of far more students than our failure/abandon rates would suggest. This monograph has not only addressed the critical question, "How may teachers gain the attention, cooperation, confidence and commitment of students to link will and skill?, it has also dealt with the issue of motivating teachers to mediate student motivation by re-thinking the design of their instruction.

APPENDICES:

1. Les stratégies cognitives .....(Saint-Pierre,1991) 19.
2. Les quatres étapes d'une démarche d'étude efficace...(Saint-Pierre,1991) 20.
3. An outline of the basic metacognitive strategies 21.
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6. A case study: "How Do Teachers Engage Students to Think About What They Are Doing in College?" 26.
7. Classroom Management Principles Affected by the Motivational Design of Instruction. 28.

APPENDIX 1: Les Stratégies Cognitives (Saint-Pierre,1991; p.16)

STRATÉGIES DE RÉPÉTITION

- **répéter plusieurs fois (mentalement, à voix basse ou à voix haute)**
- **ombrer, souligner. encadrer**
- **recopier (formules. symboles...) à chaque exercice**
- **prendre des notes mot à mot**

particu

- **faire des listes de termes, de symboles...**

STRATÉGIES D' ÉLABORATION

Utiliser des moyens mnémoniques (méthode des lieux. méthode des associations. méthode des mots clés)

- paraphraser réécrire en ses propres motsl
- résumer
- faire une analogie
- produire des notes (commentaires. questions)
- formuler des questions et y répondre
- créer une image mentale
- écrire une phrase qui fait le lien avec ce qu'on sait déjà
- inventer un exemple
- trouver des implications
- créer des relations

STRATÉGIES D'ORGANISATION

regrouper
écrire (les idées principales dans la margej

- **énumérer**
- **classifier**
- **comparer**
- **taire des schémas. des réseaux. des matrices**

identifier la sorte de liens entre les parties d'un réseau les parties de... les types de ... les caractéristiques de... : les causesde... : lés conséquences de... lés analogies... les séquences temporelles...

STRATÉGIES DE GÉNÉRALISATION

faire des hypothèses trouver des raisons pour lesquelles un exemple donné est un exemple du concept

- **rechercher des raisons ou une explication pour lesquelles une action**

lière est appropriée

- **comparer deux exemples trouver les ressemblances**
- **inventer des exemples**

STRATÉGIES DE DISCRIMINATION

- faire des hypothèses : trouver des raisons pour lesquelles un exemple donné n'est pas un exemple du concept
- rechercher des raisons ou une explication pour lesquelles une action particulière n'est pas appropriée
- contraster un exemple et un contre-exemple
- trouver les diftérences
- identifier le type d'exercices à faire
- inventer des contre-exemples

STRATÉGIES D'AUTOMATISATION D'UNE PROCÉDURE
(procéduralisation et composition)

- **trouver un exemple et le suivre étape par étape**
- **faire une liste des étapes à suivre**
- **pratiquer de petites étapes à la fois**
- **pratiquer la procédure entière**
- **pratiquer suffisamment longtemps pour que les étapes s'enclenchent automatiquement**
- **comparer sa performance au modèle d'un "expert"**

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APPENDIX 2: Les quatres étapes d'une démarche d'étude efficace ..... (Lise Saint-Pierre, 1991; p.20.)

Les quatre étapes d'une démarche d'étude efficace appliquées à l'étude des mathématiques

Première tâche : ***Identifier le type de tâche à réaliser***

Dans la plupart des cours de mathematiques au collégial, les eleves doivent identifier et réaliser quatre types de taches lorsqu'ils étudient.

- L'étude suite au cours qui vient d'avoir lieu
  - retenir des faits, des definitions, des règles, des postulats, des formules, des symboles, des concepts...
  - automatiser une procédure simple ou complexe
  - appliquer une regle ou une procédure à une situation familiere appliquer une régle ou une procédure à une situation nouvelle
  - résoudre un probléme tout à tait nouveau

- La révision en vue d'un test ou d'un examen
  - portant sur une portion de matière seulement
  - portant sur le contenu de tout un trimestre
  - en vue d'un test objectif
  - en vue d'un test traditionnel
  - en vue d'un test à livre ouvert
    en vue d'un test à livre fermé

- Le travail d'exploration pour un prochain cours
  - lire une section de chapitre
  - trouver des éléments de solution pour un problème exploratoire ie Le travail de recherche sur un thème

Cette classification n'est pas exhaustive. Cependant je crois qu'elle tient compte de la réalité dans les cégeps. La première tâche des élèves est donc d'identifier le genre de travail qui doit être fait. L'étape suivante consiste à choisir une stratégie appropriée pour l'accomplir.

Deuxième tâche : ***Choisir une ou plusieurs stratégies qui permettent de réaliser cette tâche***

Pour faire un choix éclairé les élèves doivent connaitre les différentes stratégies. Cette connaissance doit porter sur le quoi, le comment, le quand et le pourquoi.

- quelle stratégie peut-on utiliser?
- de quelle façon s'utilise la stratégie ?
- dans quelle circonstance une stratégie est-elle appropriée ?
- qu est-ce qui fait qu'une stratégie donnée sera efficace?

Les élèves efficaces posaèdent ces connaissances. Je suis convaincue qu'on peut les enseigner et les apprendre. Ce sont des connaissances (le COMMENT apprendre) qui doivent être enseignées aux élèves en même temps que le contenu disciplinaire lui-même <le QUOI apprendre>. En outre, il ne faut pas perdre de vue qu'un choix de stratégies affectives et de gestion des ressources doit être fait à mesure que l'ORGANISATEUR en détecte le besoin.
La tâche a été identifiée, la stratégie pour la mener à bien a été choisie, il faut maintenant l'effectuer c'est l'EXÉCUTANT qui commence son travail.

Troisième tâche : ***Exécuter les stratégies choisies***

C'est à cette étape que se fait l'étude proprement dite. Par exemple, un élève a pour tache d'apprendre à mettre des fractions algébriques au même dénominateur. Il a identifié qu'il s'agit d'apprendre à automatiser une procédure. Il décide de chercher un exemple et de le suivre étape par étape, de pratiquer la procédure entiére et de comparer sa solution avec celle de son camarade.

Un autre doit apprendre à définir les ensembles de nombres N, Z, Q, I, R, et à identifier Si un nombre appartient ou non à un ensemble donné. Il décide de faire un schéma des ensembles de nombres et des définitions de chacun, de trouver les similitudes entre les nombres d'un même ensemble et de trouver les différences entre deux nombres d'ensembles différents.

Pendant que se déroule cette étape, l'élève efficace poursuit continuellement ses réflexions métacognitives pour s'aluster ou changer de stratégie au besoin. Finalement, l'élève doit vérifier que l'apprentissage a bel et bien été réalisé. Si ce n'est pas le cas, il lui faudra recommencer la démarche.

Quatrième tâche : ***Évaluer si l'apprentissage a été réalisé***

Beaucoup d'élèves ne font cette évaluation que le jour où ils reçoivent leur note suite à un test ou autre travail. Sans doute l'anxiété aux tests diminuerait-elle s'ils pouvaient prévoir ce qui risque de leur arriver.

À cette étape aussi, les moyens dont disposent les élèves faibles sont très limités. Cette tâche fait appel à des stratégies métacognitives. Il en a été question précédemment. Ajoutons que les élèves doivent développer cette habileté à se parler eux-mêmes, à prendre conscience de leurs démarches et à les gérer. L'étude de la métacognition étant relativement nouvelle, les enseignants disposent de peu de moyens pour guider les élèves dans cette tâche. Il serait toutefois nécessaire qu'on trouve des moyens pour répondre à ce besoin.

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APPENDIX 3: An Outline of the Basic Metacognitive Strategies

1.0 Metacognitive Strategies

1.1 Collect information about the task.

1.2 Sort out what is needed to do the task.

1.3 Determine what resources one has and those one needs to do the problem.

1.4 Compare the relative strengths of various strategies (are there some strategies which could help me do the task better, more efficiently?

1.5 Define the problem:

1) What task is to be done?

2) What resources do I have and will I need?

a) When and where do I go to get more help?

b) Whom do I ask for help? (Teacher, peers, classmates, workshops)

3) How will I know if the strategies are working to get the task done well and on time?

a) Think about the specific daily actions to be performed ("tactics")

b) Stick to the plan and not allow myself to be distracted ("strategies")

APPENDIX 4: The Four Steps for Working Smarter and Not Harder.

STEP 1: Identify and define the task to be worked on

1. Attending classes
2. Taking and revising class notes
3. Preparing for and writing tests
4. Preparing for and writing assignments
5. Reading textbooks
   - 5.1 Attention, concentration and memory:
     - 5.11 Distractions and self-reinforcements
     - 5.12 Study time and place
     - 5.13 Procrastination effects
   - 5.2 What to underline, how to prepare summaries etc. (Survey Question, Read, Recite Reflect, Review ---SQ4R-- method)
6. Library, research, or term papers.
7. Others (Discuss with friends, the teacher, or counsellor)

STEP 2: Choose an appropriate strategy to do the task. (The following descriptions have been adapted to item 5 "Reading textbooks," in Step 1 above.)

1. Cognitive Strategies
   - 1.1 Reading and following directions (Can you summarize the directions?)
   - 1.2 Repetition
     - 1.21 Passive types: Highlight, underline, circle; recopy, take word-by-word notes; lists of words, key ideas etc.
     - 1.22 Active types: Repeat the main points, a small part at a time, of what you have just read or done.
   - 1.3 Elaboration:
     - 1.31 Passive types: Make special marks to indicate something you don't understand, especially after re-reading or trying it after several times. (For example, ! after one reading and !!! after three readings.) Ask questions about what it is you don't understand.
     - 1.32 Active types: Summarize in your own words what you read or have been doing. Try to find your own example related to the topic. How might this help you understand a similar problem?
   - 1.4 Organization
     - 1.41 Passive types: Copy an outline in the margins of the book or in your notes. Count, compare or classify things.
     - 1.42 Active types: Make your own outline and ask why the item is listed here rather than somewhere else. Prepare a table, chart, graph etc. to see sequences, trends, patterns, relationships of parts to whole etc.
   - 1.5 Generalization
     - 1.51 Passive types: Think about why other students have not done this work. Keep thinking to yourself that all this work is just wasted effort. In other words be sure to be totally down on yourself, the "system," and don't forget to blame others for the troubles

you have!

1.52 Active types: How have others managed to get through this task? What do they know that I have not yet learned? If other people have done these tasks there must be a few who went through what I'm going through. Who would know the answers to these questions?

1.6 Discrimination: How are the requirements of this task different from other tasks that appear similar. In other words, what worked for me before may not work for me again because the task is just a little bit different. Can I see this "difference?" Can you think of an example of what not to do?

2. Resource Management Strategies

2.1 Resource availability

2.11 What skills do I currently have to do the task?

2.12 Do I have the directions, books, paper, pencils etc. I will need to do the task?

2.13 Are there others that can help me understand, plan or prepare for the task?

2.2 Time management

2.21 When will I do the task? Do I know how to prepare and use an agenda? Have I made realistic short term and long term plans (what if I can't do the work as planned and when planned. Do I have a backup plan? Will I have time to fall back on another plan if my first plan does not work? Will there still be resources (friends, teachers, books) available for me to use or call upon?)

2.22 Have I tried to break up the task into manageable sub-goals. Planning to work in several short sessions is usually much more effective than trying to do all the work at once.

2.3 Environmental controls

2.31 Do I have a regular place of study?

2.32 Does the place where I study support or distract me from studying?

2.33 Are there resources for me to do my work or do I have to continually walk around to get something "I forgot"!

2.4 Help-seeking behaviours

2.41 How do I get help from friends?

2.42 How do I ask for help?

2.43 Do I give people whom I ask for help the time to help me? Or, am I always in a "rush"?

2.44 Have I tried small study groups? Peer tutoring? Contacting the teacher?

3. Affective Strategies

3.1 Positive self-talk: Intelligence can be taught! Many people learn to be smart! Focus on what you can do to change from what you don't know to what you will know. Try to stick to changing rather than on "how well you did or did not do!"

3.2 Self-reinforcement: Do you plan your activities so that you reward yourself for having spent time at work, getting the work done etc.? Do you find that you just give up and feel miserable for "wasting your time"?

3.3 Control: Anxiety, impulse, stress management, persistence and "time-on-task".

4. Metacognitive Strategies: (See also appendix 3)

4.1 Can you foresee the tasks about to be asked of you?

4.2 Can you determine the difference between what skills you now have and the skills you will need to do the task?

4.3 Can you decide which strategy to use? Do you know how to modify the strategy to fit the task?

STEP 3: Executive and Managerial Strategies

Try the behaviours. Remember to give yourself the time to do them, and especially the permission to fail. It is the rare person who learns the first time to do things the right way. Most of us have to keep plugging away at it.

STEP 4: Evaluate progress and not results!

What works for you and how! Start the process all over with STEP 1.

APPENDIX 5: Questioning strategies for examining student motivation.

1. Self-Diagnosis
   1.1 Ask questions about student's behaviours (homework, assignments, attending class, taking and revising notes, asking for help, following up on suggestions).
   1.2 How does the student see the relationship between the grades s/he gets and the time (not effort!) on task.
   1.3 How does the student deal with boredom, anxiety, guilt?
   1.4 How does the student deal with energy? (Feels sleepy and tired doing homework but recuperates rather well when distracted!)

2. Check out the student's motivation
   2.1 How was the transition from high school to Cégep? (Most will tell you they did okay in high school but have found it difficult to get organized or to adjust to Cégep.)
   2.2 How does the student deal with requests for work (procrastination)?
   2.3 How does the student deal with distractions and self-reinforcements?
   2.4 Under what conditions does the student get enjoyment from thinking?
   2.5 What are the levels of attention and concentration? (Under what conditions does the student fall asleep when reading assigned work, or doing homework?)
   2.6 What level of control does the student have over his/her life? Some students just seem to live in a world filled with accidents, mishaps, partners coming and going in their lives, family and personal problems etc.

3. Engage the student's awareness about his/her strategies, their effectiveness and the need to consider changes.
   3.1 How can you know if the strategy works for you?
   3.2 If a strategy does work, does it affect you to use it again in the future?

4. Increasing student motivation means encouraging students to
   4.1 talk about cooperative rather than competitive learning
   4.2 work with expert peers.
   4.3 take moderate risks (not to try "sure" things, nor to attempt to do too much to try to impress anybody.
   4.4 re-attribute success to effort, strategy development and use.

APPENDIX 6: A case study.

How Do Teachers Engage Students to Think About What They Are Doing in College?

A case study remains one of the single best approaches to document and explain the issues being discussed. We present the following vignette so that college teachers can identify with the reality being portrayed, learn about the issue to discuss, how to engage the student, and how to encourage (realistically) students to consider change.

In the following verbatim quote J.S. is a student in the Psychology of Mental Health course. She has written the following partly in response to an essay on "Student Academic Stress - Causes and Prevention." We can see that she is "projecting" onto Marc her own feelings about her learning, performance and evaluation anxieties in a math. class. Her work was quoted because it is one of the more articulate and well-written ones (just a few mistakes) and because it is very typical of student essays. I believe it is also typical of student faulty thinking about motivation.

> "So, there he is, in his math class, trying to listen to what the teacher says when suddenly he realizes the second hour of the class is scheduled for a test. Marc is really stressed: he feels his heart beat just went up again, he is sweating a lot and he is very tensed. Marc is not sure if he is well prepared for this test. He is tired and he did not have the time to review yesterday because he had a party that he did not want to miss at all. Also, it is the first time he has that teacher for a math class. Marc has no clues about the duration, the form and the difficulty of the test.
>
> Here, follows nine different coping strategies Marc could use to deal with this academic stressful situation.
>
> > 1) Marc decides that his teacher will probably give a make-up test if anyone gets a poor grade on this test. After all, the test is only worth 10% of the semester and no kind teacher would give a poor grade to his students because his goal is their academic success."

We see the egocentric bias at work here (Marc does poorly and the teacher will have to do something for him); we see the performance orientation; the lack of self-regulated behaviour ("he had a party he did not want to miss at all"); the reliance on others to solve a problem related to poor choices (attending a party instead of studying, not noting down the test date); and, the false effort (taking an announced test which comes as a "surprise"). I outlined the following answers on her essay. There was just enough information for her to understand the basis of the grade and for her to get involved. My final comment was, "See me if you want to talk about how Marc could work smarter and not harder!"

She did come. And she made no pretense that Marc was a "safe" way to write about herself. [In this case, the young woman who wrote this essay answer was asked about her own belief system. "Have you ever had happen to you what happened to Marc?"] The first step is to get the student to reflect on self-diagnosis. Did she know about the test? If not, and assuming it was in the course outline or announced ahead of time in class, how did she not know? [NOTE: If the student answers appear to be on the right path then the teacher continues to elicit from the student awareness about agendas and planning, time management etc.] If J.S. did not know about the test, engage her to learn about how to behave to avoid this problem again. The "trick" is to get the student to make statements about behaviours that have led up to the problem and what behaviours to change to correct the problem and avoid its re-occurrence.

"In the best or worst of scenarios what happens next" "What do you suggest be done?" Steer the student away from vague answers (she tells you she will study "more") to more practical statements, statements that describe *specific* actions and not intentions. Teacher answers like "Will that be enough?," "What else could be done?" elicit responses. Keep hammering away for answers that describe behaviours and not how the student feels or thinks "things" should be done. At the end of a brief session (about 15 minutes) ask the student to summarize the major points that have been agreed upon that would bring changes in the behaviour. Ask the student to make a public (voice it out loud to the teacher) statement about the perceived difficulty of doing these tasks. Discuss the obstacles one by one and agree on behaviours. Get the student to make a verbal commitment to try and then to report back. [In this manner students are learning to work on their own, to use resources (teachers, library etc.) and pay attention to feedback. Besides, insisting on seeing them reinforces the *message* that *progress* is very important.]

We agreed that J.S. would look up information about test dates in the course outline, keep her eye open for other information which could be useful, note it down in her agenda, plan a study schedule (we talked about just how much she could study at one sitting), and then to come back to show me the results. It became clear, of her own admission, that she too wanted to do better on tests. It seemed to her that what she found on her tests were most often a "surprise." It seems she couldn't foresee that the test questions were to a good degree predictable. We chose to direct the questions to what she could do, instead of what she had been doing, because what was needed seemed more important and constructive than what was in need of "fixing."

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APPENDIX 7: Classroom Management Principles Affected by the Motivational Design of Instruction.

The list of topics which follows is meant to be indicative and certainly not exhaustive. The purpose is to reassure teachers who consider the motivational design of instruction, about what would be expected of them. The brief description that follows each entry is meant to show teachers that the suggestions, which would be made to teachers for the motivational design of instruction, are practical and only serve to increase the motivation of both teacher and student!

Presenting New Information: Use an analogy to anchor the new concept to old and familiar ones or find a current example in the daily lives of students to which to tie down the new concept. Knowing if students are "following along:" Monitoring student progress may be done with any of several techniques discussed by Cross and Angelo (1988). The more common ones are to stop the course at some point and ask students to write, in one brief paragraph, what has just been covered. Alternatively, the student may be given a 3" x 5" card, for example and told at the end to the class to write down one or two items from today's lectures which still seem unclear in his/her mind.

Attendance: As an example of how activities in the classroom may be concurrent, I choose to explain that combining the above item, "presenting new information" will automatically take care of attendance. Students are required to sign and hand in the card -even if it is left without comments. Thus, I can get the attendance checked at the same time as I sort cards into different piles to see if I ought to spend a few minutes in the next class to explain more clearly the material.

Discussions: See the McKeachie et al (1994) work cited in the body of this monograph (page 13) for some very interesting and *realistic topics and suggestions*. For example, "How Can You Have a Discussion if the Students Haven't Read the Assignment?" seems a common complaint of teachers which has been addressed in this most informative book.

Teacher-Made Tests: The central issue that both teachers and students have is with "fair" testing. But, what does that mean? The question should be, "How do you know your tests are doing their job?" Teaching and learning are evaluated on a test. To automatically assume that one's test is "fine" and that students failed it because they are lazy, unprepared etc. is no fairer than student claims that the test was "tricky" and "too tough." A teacher who wishes to share control with students needs to also has to shoulder some of the responsibility. Students get demotivated very quickly when they realize that teachers assume all the control for a test and the students all the responsibility. Students may not be testing experts but they can understand that when half the class gets one answer consistencly wrong that something with the test needs attention. There are item, interpretive, and/or instructional biases in all teacher-made tests. [The interested reader is referred to Talbot (1994)]

In brief, any variable that is likely to appear on this list has these key features if we want to achieve the motivational design of that variable in instruction:

1.0 Provide a supportive social environment

2.0 Set a level of task difficulty from the student's perspective.

3.0 Make it clear you expect success from all students.

3.1 Help them make clear and realistic expectations

3.2 Teach goal setting, performance appraisal and self-reinforcement

3.3 Maintain realistic expectations for yourself and course objectives

3.4 Model strategy development and use

3.5 portray effort as an investment rather than a risk

3.6 deal with faulty attributions

1) false effort and the fundamental attribution error (most likely (successful students are born that way!))

2) overconfidence and false consensus effects

3) Link outcomes to effort

Glossary of Terms

Glossary of Terms

Affective motivation: The usual and initial emotional reaction which incites one to behave. The tendency for emotional reactions to be primary motivators of our behaviours.

Affective strategy: Plans that emphasize how you feel about learning as determinants of behavior, especially concern over protecting one's self-esteem.

ARCS model of motivation: Attention, Relevance,Confidence, and Satisfaction (Keller,1987).

Attribution: What one perceives as the causes for one's (or others') successes and/or failures.

Attributional error: The bias in interpreting personal successes with dispositional attributions and one's failures with situational attributions, all the while using the opposite interpretations for others' successes and failures. (See dispositional and situational attributions.)

Attributional retraining: Teaching students to rethink their explanations of the causes for their failures or successes.

Capacity beliefs: The realization that an action is possible since one possesses the knowledge, the resources and the time to carry out a task.

Class side manners: Providing students with a model and with support to understand the changes in attitudes and behaviours that are necessary for fostering self-regulated learning.

Cognitive engagement: The degree to which a person believes that what he thinks, expects and values will determine the actions he will perform.

Cognitive strategy: Plans that emphasize that what you think about learning as determinants of behavior, especially learning what you don't know to get the job done.

Comprehension monitoring: Orchestrating and coordinating different types of strategies to be efficient and reasonably successful.

Control beliefs: The realization that one has the skills, or can learn them, to execute a given task. Usually, persistence, time on task, and measuring means to an end are also included.

Dispositional attributions: The belief that behaviour is determined by innate ability and effort.

Errant knowledge: students think they know more about the procedures, conditions and contexts of study skills and learning strategies than they actually do.

Extrinsic motivation: The belief that one's behaviour results from determinants outside of one's control. The usual major themes are beliefs in the supernatural, luck or chance. Examples in the classroom are working for the pay check or for the grade.

False consensus: The mistaken belief that our faults and shortcomings are shared by many others thus making ours seem acceptable. A tactic usually to protect sagging self-esteem for having done something wrong.

False effort: "A popular tactic is to try hard, but to provide oneself with excuses to explain why trying did not help, thereby avoiding inferences to low ability by redirecting the causes of failure to external factors. It is also common for students to invent plausible reasons for having not tried, thus forestalling teacher displeasure. (Covington and Omelich, 1979; p.170)."

Faulty attribution: Assigning the wrong causes to behavior. We seem to me more conditional in determining the causes of our behavior then when offering explanations for the behavior of others. (See "fundamental attribution error").

Fundamental attribution error: Under most circumstances when the person involved is talking about his/her success, the causes will be assigned to one's ability and effort (personal causation) and failure for himself/herself will be attributed to task difficulty, unrealistic temporal constraints or generally to "bad luck" (dispositional causes). However, one tends to explain the causes of success of someone else in terms dispositions and their failures in terms of personal causes.

"Good" vs. "poor" strategy user: Persons who see learning in terms of evaluating their skills and improving upon their ways of learning are "good" strategy users; "poor" strategy users react to learning task as threats to their inadequacy and competence. The good strategy user focuses on mastery learning while the poor strategy users is overly concerned with protecting self-esteem.

Intrinsic motivation: The belief that one's behaviour results from one's choices and actions. The major themes are self-determination, self-efficacy and striving for competence and mastery. Examples in the classroom are pride, satisfaction, enjoyment etc. in delivering a good lecture or handing in an assignment.

Law of effect: One tends to repeat those behaviours which have been followed by a reinforcement. In plain English, people tend to repeat what they think "works" for them and to avoid repeating those behaviours for which they are punished (or not rewarded).

Learning orientation: The tendency for students to approach learning tasks as a means of proving themselves to others, parents, universities and possible employers ("performance," "goal," "grade" or "ego" orientations); or to view learning tasks as a means of improving themselves ("mastery," "learning" and "intrinsically motivated learning" are often used synonymously).

Learning tactic: "A learning tactic is any individual processing technique one uses in service of the plan. (Derry, 1988/89;p.6)".

Learning strategy: "A learning strategy is a complete plan one formulates for accomplishing a learning goal (Derry,1988/89; p.6)"

Mediated motivation: "The role of assisting the students comprises many different functions; encouraging, sympathizing, challenging, presenting new things, being an example, advising, depending on the changing needs of the particular students (Dultz,1994; p.35)."

Mediated thinking: Assisting students "...in their efforts at changing and improving themselves (Dultz,1994; p.35)."

Metacognitive strategy: How you think about yourself as a thinking, learning being. The ultimate dichotomy is to think in terms of how one feels or how one thinks as determinants of one's behavior.(See "affective strategies" and "cognitive strategies".)

Modelling: "The most effective way to show students about a "generative model of processes and skills underlying continuing motivation to learn (McCombs,1988; p.155)."

Motivation: "...a hypothetical construct used to explain the initiation, direction, intensity, and persistence of goal-directed behaviour (Good and Brophy,1995;p.343)."

Motivational design of instruction rests on five important sub-tasks of the larger motivational context: (1)Volitional training must precede motivational training, (2) teachers must elicit the cooperation of students, (3) teachers need to model the behaviours, (4) faulty student attributions for success and failure must be corrected, and (5) students must be helped to acquire and practice learning tactics as part of their learning strategies.

Motivational skills training (program): Promoting students' perceptions of self-efficacy and personal causation, through the development of better metacognitive, cognitive and affective strategies (adapted from McCombs,1988; p.164).

Overconfidence effect: Being blind to the need to plan alternative actions to compensate or re-adjust sub-goals when one gets feedback that suggests one needs help.

Self-regulated learning "...is active learning in which students assume responsibility for motivating themselves to understand material they study (Good and Brophy,1995; p.361)." "The ongoing process in which the learner makes sense of the learning task, creates goals and strategies, and implements actions designed to meet his or her goals for the given learning context (Ridley, McCombs and Taylor, 1994; p.53)."

Situational attribution: The belief that behaviour is determined by luck and difficulty inherent to tasks.

Strategy belief is composed of a learning strategy and a learning tactic which are assumed to be under cognitive control. The assumption is that the student thinks that the more he develops and uses tactics and plans the more efficient the ratio of effort-success.

Underlying continuing motivation to learn: "The concept of continuing intrinsic motivation to learn is defined as a dynamic, internally mediated set of metacognitive, cognitive, and affective processes (including expectations, attitudes, and beliefs about the self and the learning environment) that can influence a student's tendency to approach, engage in, expend effort in, and persist in learning tasks on a continuing, self-directed basis (McCombs, 1984; p.200)."

Volitional training: "An appropriate action that will lead to the transformation of the present state into the desired future state (Kuhl, 1987)."

Work ethic in cégep students: The personal, social, cultural and political forces and values which operate on a student to seek out, persist at work and make personal investments to achieve graduation from Cégep.

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